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ORIGINAL ARTICLES.

CONGENITAL PTOSIS.—REPORT OF A CASE
TREATED BY PANAS' OPERATION.¹

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Mr. President and Fellows of the Society.—I wish this evening to exhibit a case on which I operated two years ago. This child was brought to my office in May, 1890, the subject of congenital ptosis. There was entire absence of the levator palpebræ muscle with great flattening of the ossa nasi and well marked epicanthus. In order to look at objects even a little below the horizontal meridian she had to throw the head backward, distort the face by tension of the orbicularis oris, zygomaticus and other facial muscle in her efforts to widen the palpebral commissure by depressing the inferior lid. While the occipito-frontalis scarcely made an impression on the superior lid, the movements of the globe were normal and the vision was apparently perfect. As the father was exceedingly anxious to have something done, I decided to perform what is

¹Reported to the Louisville Clinical Association, May 17, 1892.

known as Panas' operation, which was done by making an incision from one canthus to the other, interrupted in its middle for about one-third of an inch; this incision followed the furrow of division between the tarsal cartilage and the orbital portion of the eyelid. A horizontal incision with a slight convexity upward and about three-quarters of an inch in length was then made just over the orbital margin passing down to the periosteum. Then, by two short vertical incisions through

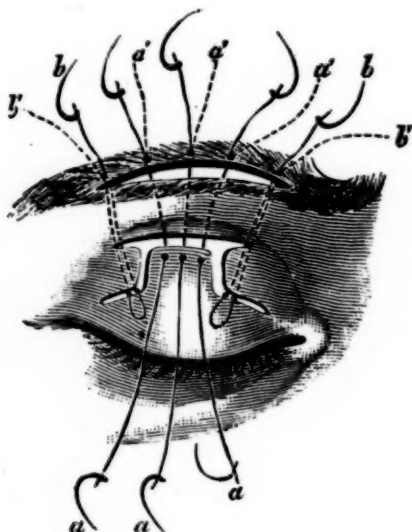


FIG. I.

the integument this incision was joined to the first incision at the border of the tarsus. Still another horizontal incision was made along the upper border of the eyebrow deep enough to extend to the periosteum and about an inch in length. Then the little peninsula of skin marked out by the middle, lower, and vertical incisions was dissected from the tarsus down almost to its ciliary margin. Then the bridge between the two horizontal incisions was undermined and the peninsula of skin from the lid passed under the brow and securely stitched to

the superior lip of the upper incision. I operated on one eye at a time with interval of about one week between the operations.

The accompanying cuts illustrate the steps in the operation. Fig. 1 shows the incisions. Fig. 2, the operation complete. The wounds were dressed with collodion and iodoform without bandages. The object of the operation is to have the occipito-frontalis assume as far as possible the function of the missing levator palpebræ muscle without interfering with the closing of the lids.

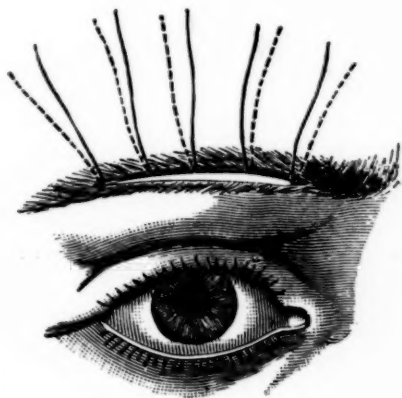


FIG. 2.

She has, as you see, pretty good control of the upper lid by the action of occipito-frontalis and no longer distorts the face in her efforts to depress the inferior lid. She has been in school for the past year and has no trouble in keeping up with her classes.

The only disfigurement from the rather extensive operation is the small pit under the brow where the slip of integument was passed through. A few hairs persistently grow from this opening. This is the only case in which I have attempted this operation, in fact the only time I have ever seen it performed. While the result has not been perfect so far as correcting the

deformity is concerned, the improvement has been so marked as to lead me to regard this as the most rational and the most successful of the various operations that have yet been devised for the relief of this peculiar and distressing deformity. If I have occasion to again perform this operation I shall modify it by making my superior horizontal incision higher and nearer to the median line and also make the dissection and insertion of the flap nearer the median line thereby getting a closer connection between superior lid and the more athletic portion of the occipito-frontalis muscle. I shall also be more careful in removing the hair bulbs from the end of the flap before passing it under the brow. For the epicanthus I followed Arlt's method of excising a triangular piece of the fold on either side of the nose.

The epicanthus and the flattening of the nose generally disappear to some extent as the child develops. In this case there has been very considerable development of the parts since she has been under my observation. I regret that I did not secure a photograph of the case before the operation. But the deformity was so great that the parents very naturally objected to having it photographed.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.—
TWENTY-EIGHTH ANNUAL MEETING HELD
AT FORT GRISWOLD HOUSE, NEW LON-
DON, CONN., JULY 20 AND 21, 1892.

FIRST DAY.—MORNING SESSION.

The Society was called to order by the Vice-President, Dr. George C. Harlan, of Philadelphia. The first paper read was entitled:

"History of a Case of Gunpowder Injuries to both Corneæ, Irides and Lenses, with Subsequent Restoration of Vision to Almost Full Acuity." By Dr. Charles A. Oliver, Philadelphia.

The patient, a young man, æt. 18, July 4, 1891, received the powder contents of a blank cartridge squarely in the face from a distance of three feet, the gravest part of the injury being several penetrating wounds of both corneæ with deposition of powder in both irides and lenses. He was brought to Will's Hospital several hours later. The particles of gunpowder were removed as thoroughly as possible from the corneæ, conjunctivas and sclerotics under cocaine and atropine. When the patient was first seen by the writer, sixteen hours after the accident, there was found to be in the left cornea a rather peripheral wound, with corresponding tear in the iris, through which a powder grain could be seen sticking to the lens. An-

other deep wound extended almost through the cornea. The fundus was apparently normal. In the right eye there was a penetrating wound of the cornea, with injury to the iris. The lens was swollen and rapidly becoming opaque. Four days later there was an outburst of secondary glaucoma. Eserine and cold compresses were then employed, and the following day an iridectomy was made. The wound healed promptly and atropine was resorted to on account of slight tenderness in the ciliary region. In the left eye was continuous improvement. When the patient was discharged, September 4, there was good perception of light in both eyes. In the left eye there was considerable unabsorbed lens matter. The right eye had normal tension. Most of the lens matter seemed to have been absorbed. The lower half of the pupil was covered by a thin opaque sheet of capsular debris. Two weeks later a broad round hole was made in the lower half of the capsule, securing vision of $\frac{5}{x}$ with proper correction. A free double dissection of the left lens was also done, obtaining vision of $\frac{5}{x}$. Since the discharge of the patient (one year), the eyes have remained perfectly quiet and the patient pursues his occupation of outside delivery agent in a large retail store.

"Removal of Fragment of Steel from the Vitreous Chamber by Means of the Electro-Magnet with Preservation of Nearly Normal Vision." By Dr. Samuel Theobald, Baltimore.

The piece of steel which was very small had passed through the margin of the cornea and through the iris near its periphery, but fortunately missed the lens. It had been in the eye eleven days when the attempt was made to extract it, and had excited a dangerous degree of inflammation. Owing to the clouding of the vitreous humor, its location could not be determined with the ophthalmoscope. Under antiseptic precautions a longitudinal incision, about 4 mm. long was made through the sclerotic and deeper coats of the eye, between the inferior and external recti-muscles and back of the ciliary

body, through which the magnet point sterilized by boiling water, was introduced into the vitreous chamber. After several unsuccessful attempts, the bit of steel was withdrawn adhering to the magnet point. There was considerable hæmorrhage, but no loss of vitreous. The after-treatment consisted in the application of a lotion of opium and boracic acid and the instillation of atropia. The case made a rapid and uninterrupted recovery, and the eye is now (three months since the removal of the foreign body), very nearly normal in appearance, the pupil being not quite circular, is free from inflammation and photophobia, has a clear vitreous and has vision= $\frac{20}{xxv} +$.

"Foreign Body in the Retina." By Dr. F. Buller, Montreal.

The patient, a young man, æt. 20, had received an injury of the left eye six days before coming under observation, by being struck with a piece of metal. There was a penetrating wound of the cornea with perforation of the iris and zonula, but no opacity of the lens. A short distance below the papilla was seen a piece of metal lying in the retina. Rest and instillation of a 2-grain solution of atropia was ordered. A zone of opacity around the foreign body, gradually increased in size. Twenty-six days after the injury the eye felt well. Vision= $\frac{6}{xii}$. There were pronounced evidences of neuro-retinitis. The piece of metal was still quite distinct. For a considerable distance around the foreign body there was marked atrophy of the choroidal pigment. Fourteen months later, the eye was still giving trouble. Vision= $\frac{6}{xxvii}$. There was diffuse hyalitis with fine opacities in the vitreous. The optic nerve was red and swollen. The foreign body had, however, entirely disappeared from view. Its former seat was marked by a small patch of pigment. It was thought that an attempt to extract the foreign body would probably have to be made under less favorable circumstances than if it had been made while the body was in sight

"A Case of Traumatic Irido-Choroiditis from Contusion of the Eyeball Ending in the Development of Intra-Ocular Glioma."
By Charles Stedman Bull, M D , New York.

The patient was a little girl, *æt.* 3, who had been struck on the left eye ten days before by the bowl of a large spoon. There was no rupture of the eyeball. The child at once complained that she could not see. Ten days later the eye was sightless, there was a central infiltration of the cornea, with loss of epithelium. The iris was dilated, discolored and immovable. The vitreous was hazy and there was a yellowish reflex from the nasal portion of the fundus due to an exudation. There was no pain or sensitiveness on pressure. The child was and had always been perfectly healthy. One week later, numerous hæmorrhages occurred in the retina and vitreous, and the tension was increased. All external signs of irritation then subsided. Three months later a detachment of the retina occurred, involving nearly two thirds of the fundus. The yellowish reflex still remained and vessels were seen running over it. The tension still remained above normal. Six weeks later the sclera in the ciliary and equatorial regions became thinned. Enucleation was urged but refused by the parents. Four months later the child was much worse. She was anæmic and emaciated. There was a large ciliary and equatorial staphyloma; there was no anterior chamber. The lens was opaque and crowded against the cornea and the tension much increased. The parents now consented to an enucleation, nearly a year after the occurrence of the injury. The child at first improved very much in health, but two months later she complained of headache and nausea and the pre-auricular and submaxillary glands were found enlarged. Three weeks later a growth was discovered in the orbit and the upper cervical glands became enlarged. All the symptoms grew steadily worse, and three months after the enucleation the right eye became involved, a small yellowish deposit being found in the inferior temporal quadrant. The left orbit became filled with the growth, all the glands on the left side became enormously

enlarged, the child became gradually stupid, then comatose, and died sixteen months after the occurrence of the blow on the left eye.

No autopsy could be obtained. A microscopic examination of the left eye showed gliomatous masses developed in a matrix of exudative tissue.

"Hyaline Bodies (Drusen) in the Nerve-Head." By Dr. G. E. de Schweinitz, Philadelphia.

The author described hyaline bodies in the nerve-head from the standpoint of microscopic examination, and reported a case in which, during life, he had observed the well known experiences of the globular formations in the papilla, and afterward had the opportunity of making a thorough microscopic investigation. The patient was a male, æt. 45, without important points in his clinical history, except a record of having been injured in the head some twenty years ago. The optic nerves were partially atrophic, and the globular masses, on ophthalmoscopic examination, appeared in a circle slightly within the apparent margin of the nerve-head, and were capped with shining particles which glistened like cholesterin crystals. At the post-mortem examination the eyes and brain were removed. The following lesions were present:

1. Compound hyaline bodies, or "drusen" in the nerve-head, situated in their seat of predilection within the tissue of the papilla, anterior to the lamina cribrosa.
2. Atrophy of the optic nerve, which may or may not have antedated the formation of the "drusen," but which evidently was not caused by them.
3. Thickening of the coats of the arterioles in the optic nerve below the lamina, and in the central artery in the neighborhood of the "drusen," a change in the adventitious coat of the vessel suggesting hyaline degeneration; but proved by differential stains to be composed of a different material from the "drusen."

As negative results it was stated that (1) the retina and

choroid exhibited no distinct pathological lesion, save some thickening of the vessel walls, and that excrescences springing from the lamina vitrea were absent; (2) the other cranial nerves, so far as examined, were normal; (3) the investigation of the structures of the brain, made by Dr. Francis X. Dercum, yielded a negative result, and hyaline changes in the blood-vessels were not present.

The author is in accord with Hirschberg, Circinone and Gurwitsch, believing with these observers that the "drusen" have nothing in common with the choroidal excrescences, but that they are the expression of a pathological process confined to a small portion of the optic nerve, possibly on account of local anatomical reasons. His own case is interesting, not only as confirming the observations of the authors just quoted, but also because his examination included, not merely the nerve-head, but a very considerable portion of the optic nerves and also the brain, and on account of the negative results tended to confirm the belief in the local nature of the disease. The apparent hyaline change in a portion of the adventitious coat of the central artery was interesting, probably only, however, as an associated condition, and having to do rather with the inflammatory state which had preceded the optic atrophy, than with the pathological process which was responsible for the formation of the "drusen." The paper was freely illustrated with photo-micrographs prepared by Dr. William M. Gray, of the Army Medical Museum.

"Two Cases of Symmetrically Placed Opacities of the Cornea, Occurring in Mother and Son:" By Dr. Charles A. Oliver, Philadelphia.

On February 23, 1891, a boy, *æt.* 8, came under observation with opacities of the corneæ. These had been noticed for a long time, but one year previously had enlarged and become conspicuous, following an attack of malarial fever. There was no evidence of congenital syphilis. Laveran's corpuscle was looked for, but not found. In each cornea there is a central

opacity surrounded by a ring of superficial pin-point opacities. There is and has been no evidence of inflammation. During the sixteen months that the patient has been under observation there has been no change in the appearance of the cornea.

Examination of the mother's eyes showed similar opacities of the cornea which had been present as long as she could remember. The woman was apparently perfectly healthy and free from all evidences of organic disease and with no history of pronounced illness.

"The Prime Etiological Factor of Glaucoma is Constitutional."

By Dr. S. O. Richey, Washington.

This paper, quoting from the Bowman Lecture, 1884, by Mr. Jonathan Hutchinson, the affections of the eye possibly having some connection with gout, among which is named glaucoma, elaborates the thought, shows the correspondence of the details of an attack of podagra and one of glaucoma in their clinical history, the anatomical similitude of the two regions, referring to the classes of individuals attacked by each and endeavors to explain certain differences. [? Editor]. The writer expressed in a cursory way in a discussion before the American Ophthalmological Society, some years ago, views of which this is a more complete presentation. He calls attention to Mr. Priestly Smith's theory, to the observation and experiences of others opposing it, and himself objects to Mr. Smith's as of too local and limited character. Reasoning from Schnabel's conclusion, increased tension is caused by too rapid infiltration, to which a *vis a tergo* is essential, as is found in the uric acid diathesis.

"Many manifestations of rheumatic gout are associated with chronic glaucoma, viz., enlarged or distorted joints, a peculiar senile pallor, or muddiness of the skin, periods of mental depression, and other symptoms attributable only to changes in the nervous system." The neurotic character of chronic glaucoma is argued, its origin thought to be the absorption of toxic substances from the intestinal tract the results of indigestion

for which reason, it is claimed, operation in chronic glaucoma is unreliable.

In case of chronic glaucoma, the writer advises control of the quantity and quality of food to the exactness of physical needs, the prompt excretion of improper intestinal products, the use of uric acid solvents (lithia and piperazin), strychnia and galvanism as the wise course.

He thinks that "in the hypothesis discussed, we find the true etiological factor of that most intractable of diseases, chronic glaucoma (that acute inflammatory glaucoma is a paroxysmal expression of the same affection) local irritation or a trauma, excites an attack of glaucoma only in the presence of the dyscrasia; that operation saves the eye during a paroxysm, that operation serves little purpose in chronic glaucoma, even when it does not, by irritation, precipitate a paroxysm, that chronic glaucoma is a neurosis, a progressive atrophy with the feature of inflammation with defective power, varied by periods of apparent rest. That correcting and controlling individual habits, especially in the character and amount of food taken will do more to preserve vision than operation, that there may be a possibility of aborting chronic glaucoma if the tendency to it be recognized at an early stage."

"The Full Correction of Myopia." By Dr. Edward Jackson, Philadelphia.

The results of such correction in 29 cases of patients under observation from 3 to 10 years was given. In but three was there any notable increase in the degree of myopia and these were hard students between the ages of 12 and 21 years, and under the full correction they had subsequently become stationary. It was hoped that the reporting of such results would do away with any timidity about ordering the proper concave glasses for constant use. The contraindications were presbyopia and an exceptional inability to use such lenses for near work, similar to the inability of some emmetropics to do much near work without convex lenses; lowered acuteness of vision

so that the perfect retinal images were not appreciated; habituation to large blurred images that made sharper images unpleasant in old myopes; and divergent squint established to secure more perfect monocular vision. The temporary inconvenience or pain experienced on first using strong lenses, might be tempered by temporary partial correction, or weak lenses for near work; but should not be regarded as a contraindication.

"Constant Correction of High Myopia." By Dr. George C. Harlan, Philadelphia.

The writer reported 12 cases in which full and constant correction of myopia of degrees varying from 4 to 16 diopters had been worn for periods of from five to seventeen years. The ages of the patients varied from 12 to 25 years. In some the fundus was normal, in some there were moderate myopic crescents and in others there were extensive choroidal changes. There was not the slightest loss in the acuteness of vision in any case. In eight, the myopia was stationary. In three there was a slight increase in myopia; from .50 to 1.50 D. In one only was there a considerable increase;—2.50 D. after constant correction for nine years, and this occurred chiefly during the first four years, during which there was an uncorrected hyperphoria. He considers excessive convergence without accommodation the most important factor in progressive myopia, and the restoration, so far as practicable, of the normal relation of these two functions, the most valuable therapeutic measure.

The degree of comfortable accommodation that exists at the time or can be acquired by practice with gradually increasing lenses, should be the chief guide in deciding upon the glasses to be used. The convergence will usually adapt itself when the accommodation is given its normal range, or if it does not, may be made to conform by prisms or tenotomy.

Complete correction of the optical defect with full restoration of the normal relation between accommodation and convergence is the ideal condition, and can usually be attained in

young subjects with fair acuteness of vision and full accommodative power.

When full correction is impracticable, it is better to sacrifice something in distant vision and wear constantly the strongest glasses with which comfortable reading is possible, than to use two pairs of glasses. The concave lens necessary to give full correction may be placed in front of the constant glasses occasionally by means of lorgnettes, or bifocal glasses may be worn.

"The General Form of the Human Cornea and Its Relation to the Refraction of the Eye and Visual Acuteness." By Swan M. Burnett, M.D., Washington.

The writer presented a table showing the measurements he had made with Javal's ophthalmometer, of the corneæ of 41 eyes. These measurements show the corneal curve expressed in dioptries of refraction at the usual axis and at intervals of 5° on either side in both principal meridians. These demonstrate the fact that the cornea gradually diminishes in curvature from the visual axis toward the periphery.

This diminution is much greater to the nasal side both in emmetropia and ametropia, sometime amounting to 4.5 D. The average, however, is 2 D. less at 15° on the nasal and .5 D. on the temporal side of the visual axis. The difference in the vertical meridian is less than that to the nasal side, but on the average greater than that to the temporal side. The practical inference is that the place of election in an iridectomy is the temporal side of the cornea.

He reaffirms the belief expressed in 1885, that the ophthalmometer is one of the best means we have at command for making out astigmatism, but that it can not be relied upon to the exclusion of other methods, for it gives no indication of the amount of lenticular astigmatism, the existence of which the instrument itself has been mainly instrumental in demonstrating.

"Some Incidental Phenomena of the Shadow Test." By Dr. Swan M. Burnett, Washington.

Dr. Burnett believes the shadow test to be, on the whole and for the generality of cases, a means of testing refraction reliable to within 0.5 D. or 0.75 D. He has examined a certain number of cases, however, in which the findings of skiascopy and by the test glasses did not coincide. In those instances he has noted a play of shadows, within the illuminated area which moves across the pupillary space very similar to what is observed in conical cornea. He has measured the corneæ of such eyes carefully with the ophthalmometer of Javal and Placido's disk and has not found them more irregular than eyes which are normal and present no such internal shadows.

The phenomenon is due to some interference in the regular refraction of the light in its outward passage from the fundus and must be found in the corneal substance, (not sufficient to produce a discoverable opacity) in the lens surface or the lens substance. Of the exact nature of this irregularity we are still ignorant.

He has found the visual acuteness in such cases to be below the normal in all cases in which the internal shadows were at all pronounced. In some instances which were cited the shadow-tests give reverse movements with minus glasses when plus glasses were required for lost vision, the examination being made under a mydriatic.

"The Law of Symmetry of Our Eyes as Manifested in the Direction of their Meridians; Its Rules and Its Exceptions." By Dr. Hermann Knapp, New York.

There is a double symmetry in the human visual apparatus:

1. Each eye can be split by a horizontal section into a superior and an inferior half.
2. One eye, as a whole, is symmetrical to its fellow with regard to the median line of the body.

Dr. Knapp discussed only the latter kind, and confines himself to the direction of the principal meridians in one eye compared with that of its fellow. He based his conclusions on the examinations of 1,000 successive cases of astigmatism (10% of his private eye patients during the last three years and nine months) for whom he has prescribed glasses, and who have worn them with more or less satisfaction. The result was as follows. The meridian of strongest refraction, shortest radius of curvature, was:

	PER CENT.
A.—Symmetrically placed in both eyes in	84
vis. 1. Vertical in - - - - -	60.5
2. Horizontal in - - - - -	11
3. Diagonal, 45°, in - - - - -	4.3
i.e. a. Upper end of both on nasal side -	2.7
b. Upper end of both on temporal side	1.6
4. Intermediate, i.e., between vertical and horizontal, omitting the diagonal direction	8.2
a. Upper end of both on nasal side -	4.9
b. Upper end of both on temporal side	3.3
B.—Unsymmetrically placed in both eyes - -	16
1. Strongest meridians intermediate:	
a. Both nasally deflected (upper end on nasal side) - - - - -	1.8
b. Both temporally deflected - - - - -	2.1
2. Strongest meridian vertical in one, horizontal in the other eye - - - - -	1.3
3. Strongest meridian vertical in one eye,	
a. Nasally deflected in the other -	3.3
b. Temporally deflected in the other -	3.9
4. Strongest meridian horizontal in one eye,	
a. Nasally deflected in the other -	1.2
b. Horizontally deflected in the other -	1.6
5. Strongest meridian nasally deflected in one eye, temporally in the other -	0.8

This table shows a high degree of symmetry in our pair of eyes, viz. 84%. The dominating direction in the vertical, 60%; next comes the horizontal with 11%, then the diagonal with 4.3%.

If both meridians are vertical they are geometrically parallel, but they remain symmetrical just as if both are horizontal. Parallel direction in the intermediate position, for instance, 35° of temporal deflection in one eye, and 35° of nasal deflection in the other occurs but very rarely. There was no instance of it in this whole series.

The symmetry of our eyes may give us many hints in the selection of cylindrical glasses. As symmetry is the rule, we should try to approach this rule also in the 16% of exceptional cases as near as this is compatible with a good correction of the visual acuteness. In conclusion Dr. Knapp recommends that in our prescription of glasses, the complete or incomplete symmetry should be at once apparent; saying, for instance, so and so many degrees of nasal deflection, viz., 10m, instead of 80° O.S. and 100° O.D. Furthermore, he proposes a classification of the varieties of astigmatism based on the direction of the strongest meridian, viz., vertical, horizontal and intermediate or oblique astigmatism, where a deflection of 45° may be called diagonal. The oblique variety has to be subdivided into nasally oblique (or simply nasal) and temporally oblique (or simply temporal).

Dr. George C. Harlan, Philadelphia, read a paper giving "Statistics of Direction of the Principal Meridians of the Eye," the results obtained being very similar to those presented by Dr. Knapp.

"The Clinical Value of Repeated Careful Correction of Manifest Refractive Error in Plastic Iritis." By Dr. Charles A. Oliver, Philadelphia.

The paper was based upon a careful study of forty suitable cases, extending over a period of five years. The plan of study was not only limited to the ordinary subjective method

of lens testing, but was accomplished by some of the more certain of the various objective plans, such as retinoscopy, ophthalmoscopy (both by the direct and the indirect methods), the fundus image test, and lastly by ophthalmometry as a method of control; Thomson's ametrometer and the chromatic aberration test being used at times.

The following conclusions were presented:

1. In nearly every case of iritis, especially of the plastic forms, there is a period even after full pupillary dilatation has been seemingly artificially obtained, during which owing to the persistence of inflammatory changes in the uveal tract as so well expressed by the clinical evidences of ciliary spasm, etc., graduated instillations of mydriatics should be employed; the duration and gravity of this period being most accurately measured and determined by the systematic and repeated estimation of the varying manifest errors of refraction.

2. Whilst it is true that during this stage in nearly every case of iritis, ophthalmometric, or rather keratometric study, seems to show at times that there are bizarre and curious changes of corneal curvature, yet it must be conceded from the additional findings of other optometric methods, that the bulk of the ametropic change in such cases is due to the perversion of the lens action from what Koller terms "spastic accommodation," as the result of ciliary irritation and inflammation.

3. In nearly every case of iritis the duration of this stage can be promptly shortened by the judicious and ready use of some quick and powerful intraocular muscular paralyzant; the character of the necessary form of the drug and its amount at the time in every instance being judged by the amount of manifest refractive error found at that time.

4. In some few such cases of iritis, however, during the acme of the attacks, especially if the case be pronounced in type and stubborn in character, the higher grades of the manifest refractive error seem to obstinately persist with but little variation in amount, and to defy for a long time reasonable local and general measures.

5. In some few cases of incipient iritis, where chronic spasm of the ciliary muscle seems to present itself, or pupillary contraction repeatedly persists, local muscle paralysis as evidenced by a relative decrease of the refractive error is often quickly obtainable by a prompt and more energetic employment of some of the more powerful and appropriate local and general remedies.

6. Consequently, the careful systematic estimation of the manifest error of refraction found during attacks of iritis is of great value in the rational and scientific treatment of the disease, offering itself as not only a means by which the general prognosis of the affection can be made more certain from time to time during its progress, but permitting itself to serve as a measure or guide, as it were, by which the attacks may be more properly and more understandingly treated, and their duration shortened by the judicious and intelligent use of appropriated drugs, thus giving a better opportunity for lessening the chances of harmful and permanent after-changes to one of the most important, and yet, one of the most susceptible organs of the ocular apparatus.

"Some Tenotomies of Recti Muscles for Insufficiencies." By
Oren D. Pomeroy, New York.

CASE I.—Mr. H. T. G., æt. 53, has been wearing a spherico-cylindrical correction for several years without relieving headache and a difficulty in looking down. Has hyperphoria $3^{\circ}+$ and exophoria 2° . Divided the superior rectus of right side with diplopia and an over-effect of 2° resulted, which continued for a week; equilibrium was established in three weeks and the asthenopic symptoms were relieved.

CASE II.—B. B., æt. 16, has $+5$ D. of hypermetropia in each eye with a tendency to strabismus. Correction affords partial relief. Exophoria 16° . Tenotomy of right internus with much over-effect; corrected by a suture. Two weeks afterward the effect of the first operation was diminished and the left internus was divided. After two weeks the balance was

nearly normal. Rather weak instinct for binocular vision; one eye not quite perfect vision; resembled a case of convergent strabismus.

CASE III.—Miss C., æt. 45, overworked schoolteacher. Has headache, pain in eyeballs during near work. H. 1.25 D. in each eye; some relief from glasses. Exophoria at distance 18° . External rectus tendon divided very thoroughly. For a time some relief of symptoms. Recommended division of left externus. Case was not followed up, but two years afterward patient admitted benefit from operation.

CASE IV.—Annie T., æt. 24, has headache and pain in the eyes when sewing or reading. Cyl. of .75 D. in each eye tried without relief. Exophoria of 0° or 7° before and after glasses. The internus of right side, and after a few days that of the left was divided, but the exophoria returned as at first. Six months later right externus was advanced. This being insufficient, the left was also advanced after ten days. The effect was temporary and a prism of 2° base inward was added to the glasses and worn for a month without benefit. Exophoria was now from 5° to 9° at the far point, adduction 32° , abduction 3° . Complete division of right internal rectus and $.8^{\circ}$ of over-effect resulted and diplopia; next day binocular single vision. A few weeks later she showed at times orthophoria, some exophoria, diplopia, occasionally headaches, and she was as badly off as before.

CASE V.—Martha P., æt. 20, has headache when using her eyes. V. = $\frac{20}{XL}$ in each eye. Myopia —5 D. Exophoria 12° . June 18, 1890, left externus was divided with correction of the insufficiency. In September the asthenopic symptoms were relieved, although some exophoria remained. It was not certain whether tenotomy or glasses relieved.

CASE VI.—R. R., æt. 18, student. Headache in temple and occiput most of the time when studying. Emmetropia (homatropine) exophoria 16° at distance, hyperphoria 4° . Sept. 22, external rectus was divided, which corrected the exophoria. Three days after operation exophoria was 5° , but no asthenopia. Returned to his work. March 7, 12° exophoria,

but no asthenopic symptoms. Uses the eyes extensively. March 16, there was 10° of exophoria and the left externus was divided, resulting in over-effect which was corrected by a suture. March 19, exophoria 5° . If he looks sharply to either side has diplopia. No more hyperphoria. Asthenopia completely relieved.

CASE VII.—Sarah I., æt. 28. June 8, 1888. She has headache and inability to use eyes. Hypermetropia $+1.50$ D. under atropia; afterward $+ .75$. Glasses were worn for two months without relief. There was exophoria of 3° at the far point. Sept. 26-28, the externus was divided with over-effect, corrected by a suture. Oct. 15, exophoria 4° . Oct. 31, tenotomy of right externus. Nov. 5, orthophoria. Headache diminished.

CASE VIII.—Miss T., æt 17, has -3 D. myopia; has used partial correction without comfort. Some marginal blepharitis. Has exophoria of 5° . Left rectus was divided, an over effect was produced and diplopia for 3 or 4 days. After 10 days there was 3° of exophoria, but asthenopic symptoms relieved.

CASE IX.—Mary B., æt. 18, headache, eyes emmetropic, exophoria 3° . The right externus divided, producing over effect of 18° , corrected by a suture. In two days there was orthophoria. Headache relieved and eyes can be used with comfort.

CASE X.—Alice H., æt. 22, headache and pain in eyes when sewing or reading. The externus had been divided by another surgeon with relief, lasting six months. She is wearing a spherico-cylinder correction. She has exophoria of 6° . The externus was divided with 3° over-effect, but in three days there was orthophoria with relief of symptoms which has continued for one year.

CASE XI.—Mrs. G., æt. 38, has a myopia of -3 D. and she has worn the correction for 4 years, but still has headache and pain in the eyeballs, vertigo, nausea, and inability to use the eyes long at a time. Exophoria of 4° at the far point. Left externus was divided, with production of orthophoria. After

one month there was 2° exophoria, but the asthenopia has disappeared.

CASE XII.—H. G., æt. 65, is wearing + glasses but complains of occasional diplopia. Has exophoria of 10° and hyperphoria of 5° . Nov. 19, 1889, did tenotomy of left externus and relieved half of the exophoria. The next day there was orthophoria and no more diplopia.

CASE XIII.—Maggie C. æt. 23, sees double, having compound hypermetropic astigmatism. After wearing proper glasses for some time without relief and it being found that there was exophoria and hyperphoria of from 3° to 5° . The left superior rectus was divided, nearly correcting the trouble. In twenty days, the internus of the right side was divided, resulting in orthophoria and no more trouble with diplopia.

CASE XIV.—Mr. L., æt., 35 druggist, has diplopia and great pain on using the eyes, although he has been wearing properly fitting spherido-cylindrical glasses. Nov. 27, 1888, he had exophoria from 3° to 18° and a hyperphoria of 9° . The right externus was divided freely and for several days he had vertical diplopia. In March, he was completely relieved. In Dec. he had exophoria of 7° and no hyperphoria. He uses the eyes excessively and has no inconvenience of any sort.

In the face of the preceeding facts the author stated that most of the cases of insufficiency that he had met with had been relieved by correcting the ametropia

In dividing the tendon in some instances an operation has been made in the center and a small hook passed in dividing successively each half, this is a difficult procedure and not necessary. Ordinarily the conjunctiva is divided as little as possible and the tendon divided at its insertion, the patient is then tested by prisms and if more effect is desired, more dissecting is done. It is difficult to tell by inspection whether or not all the tendon has been divided. A little over effect is usually desired, and if considerable over-effect is obtained a suture corrects it.

In many of these cases where all the muscles are weak, the

patients have had diplopia when looking toward the divided tendon, but this has been unimportant.

"Prominent Symptoms of Hyperphoria." By H. F. Hansell, Philadelphia.

This paper was based on a study of 13 cases. The symptoms given included only those positively traceable to the hyperphoria, as demonstrated by their disappearance on the cure of the affection. In 10 of the cases the symptoms were purely local. Photophobia of moderate degree was present in 5 cases. Pain in the eyeball constant, or induced by reading was prominent in all cases.

Reflex symptoms. Six cases suffered with vertigo and dizziness. Two cases were the subjects of violent dyspepsia. In 4 cases the most prominent symptoms were excessive nervousness, irritability of temper and at times mental confusion.

"Contribution to the Subject of Intracranial Lesions with Defects in the Visual Fields.—Five cases with Autopsies." By Charles Stedman Bull, M.D., of New York.

The first case was that of a lady aged 50 years who had no trouble with the sight until four years before coming under observation, when she suffered a severe and sudden mental shock which caused a series of convulsions ending in a condition of profound nervous prostration. Then followed severe neuralgia coming on every three weeks and lasting for more than a year. The first ocular symptom was night blindness in one eye, with progressive amblyopia. One year later, the other eye became affected in the same way. Headaches then came on, boring in character and located at the vertex, but subsequently becoming continuous and confined to the occipital region. There was a large irregular central scotoma in the left eye for form and color, and a smaller scotoma in the right eye. The fundus of the right eye was but little affected but in the left eye, there was a neuro-retinitis in the stage of decline,

and beginning atrophy of the optic nerve. The patient lived four years with steadily failing vision. During the last year, she had repeated attacks of unilateral convulsions, became wildly delirious and died in a violent general convulsion. The autopsy showed extensive pachy-meningitis of convexity of left anterior lobe, some patches over right anterior lobe and one large patch over right parietal lobe. All the arteries at the base of the brain were thickened and their lumen narrowed.

The second case was a young man, aged 24 years who had suffered from headache for more than a year, at first slight and transient but increasing in severity and intensity. Six months later, appeared muscular twitchings in upper extremities and face, and attacks of vertigo. The vision of both eyes became affected. In one of these attacks, he developed general convulsions and fell a distance of thirty feet striking on his back, but the fall apparently produced no evil result. There was concentric narrowing of the field of both eyes which steadily increased and the vision slowly failed. The optic discs which were at first hyperæmic, became pale and atrophied. About six months after the first convulsion, he had two violent convulsions rapidly succeeding each other, which proved to be the last. He became very irritable, grew stupid and gradually sank into profound coma in which he died. The autopsy revealed a large tumor involving the optic chiasm, both optic nerves and the hypophysis, which on examination proved to be a small-cell sarcoma.

The third case was a gentleman aged 37 years, who had suffered from severe headaches for about nine months in the left parietal and occipital region. Two months later, there occurred a loss of vision in the right half of each field. Six weeks before coming under observation, he suddenly lost the sense of smell. Examination showed a vision of $\frac{20}{L}$ in each eye and a bilateral right hemianopsia with concentric limitation of the remaining fields. This patient had had a chancre twelve years before. The intracranial lesion was believed to be a gumma and located in the cuneus. In spite of treatment,

there was a steady failure of vision, and he began to have muscular twitchings in face and hands. He gradually became stupid, then comatose and he finally died fourteen months after the first appearance of the headache. At the autopsy an olive shaped tumor was found in the cuneus on the left side close to the median line. This proved to be a small-cell sarcoma.

The fourth case was a lady aged 72 years, who had suffered with headaches for more than a year. Six months before coming under observation, she awoke with severe pain in the head and total blindness in the left eye. There was confusion of ideas, numbness of the right arm and leg and thickness of speech. An examination showed slight ptosis of both upper lids, speech thick and slow, tongue pointing to the right side, vision $\frac{20}{LX}$, slight lenticular opacities and bilateral left hemianopsia. The ophthalmoscopic examination was negative. It was thought probable that the patient had a thrombosis and subsequent rupture of the middle cerebral artery on the left side. The lady lived for twenty months, during which time the vision failed but the fields remained unchanged. One morning she was found unconscious and died three days later. The autopsy showed a patch of softening in the left anterior lobe and in a branch of the middle cerebral artery, running through it was an old plug which completely obliterated it. There was a recent rupture of a branch of the left middle cerebral artery and a large clot of blood in the middle lobe of the brain close to the Sylvian fissure. All the arteries of the brain were diseased. At the base of the brain on the right side, overlying and pressing upon the right optic track was a tumor, the size of a hazelnut, situated just in front of the corpus geniculatum laterale. This proved to be a small-cell sarcoma.

The fifth case was a gentleman, æt. 35, who had suffered from severe headache for three years, beginning in the frontal region, but gradually extending all over the head. At first intermittent, but later constant. Occasional attacks of nausea and vertigo. Four years before he had received a violent blow on the left parietal region which caused bleeding from the left

ear and rapidly increasing deafness. Nine months before coming under observation, he began to see double. Six weeks after he came under observation, partial left hemianæsthesia appeared. There was paresis of both external recti muscles. Vision in the right eye was $\frac{20}{6}$, in the left eye $\frac{20}{1}$. There was marked papillitis with numerous hæmorrhages. There was homonymous diplopia for all distances, irregular central scotoma for all colors, vertigo very marked with a tendency to rotate to the right side. Diagnosis of cerebellar tumor was made. Towards the end he became nearly blind and died in profound coma. The autopsy revealed a globular tumor in the right lobe of the cerebellum, close to the peduncle. This proved to be a glio-sarcoma.

"The Eye of the Negro." By Dr. Charles W. Kollock, Charleston.

In presenting the paper, Dr. Kollock said that he had no wonderful discoveries to make known, but merely desired to bring before the Society some points that had interested him during a somewhat extensive practice among these people. Attention was called to the fact that the negro is fast losing his identity as far as purity of blood is concerned and that the eye of the negro has deteriorated very much since the days of slavery. Prior to this period the negroes were carefully looked after by their masters and being essentially an agricultural people, there was little or no opportunity for bringing on eye-strain. The testimony of older physicians have proved that syphilis and other wasting diseases were not common among them and that iritis and keratitis, which are now so commonly seen, were of rare occurrence. During the war and immediately after it was over, they contracted syphilis principally from the troops who were encamped in their midst, and now it is scarcely an exaggeration to say that when you see a negro, you see a case of syphilis. To this disease, and their very careless mode of living, he thought was due their great susceptibility to corneal inflammation which was now

causing great destruction of vision. Among the older negroes and ex-slaves, it had been noted that nebulous corneæ, iritic adhesions and eyes lost from ophthalmia neonatorum were very unusual, but with the younger and post-bellum it was not only of every day occurrence, but constantly increasing. Cataract and glaucoma were as commonly observed in the negro as in the white. It had been said by a number of observers that trachoma was exceedingly rare among the negroes, and while he agreed that it was infrequently seen, still it was equally unusual among the whites in Charleston and throughout South Carolina. The most severe cases had occurred in negroes. He mentioned that as the South was one into which few immigrants had come, perhaps the worst forms of granular conjunctivitis had not been introduced. Xerosis conjunctivæ was a condition of the eyes that had been seen exclusively in the eye of the negro and especially in children. It was frequently accompanied by hemeralopia but not invariably and was essentially a condition which was due to a low state of health. A case had been recently seen in an adult male who had complained only of night-blindness. The peculiar conjunctival changes were present, but there was no corneal lesion. The ophthalmoscope showed a slightly hazy papilla but no further intra-ocular changes. There was marked concentric contraction of the visual fields, but no scotoma and the color perception was fairly good. It seemed very strange that this affection was not found among the whites, many of whom lived in the same localities and under similar influences as the negro.

The refraction of the negro eye was exceedingly interesting as it was undoubtedly undergoing a change. He believed that the eye of the pure blooded negro who could not read was emmetropic, or slightly hyperopic and never myopic; that among the educated pure bloods, errors of refraction were becoming more frequent, and that with the mulattoes, ametropia was almost, if not quite as common, as among the whites. Of sixty cases of blacks and mulattoes recently examined for the most part with their eyes under the influence of atropia, or

homatropia, eleven were blacks and forty-nine were mulattoes. Of the eleven blacks seven were males and four females. Two of this number were myopic, two were hyperopic, and three were emmetropic. The forty-nine mulattoes were seven males and forty-two females. Three of the males were myopic and four were hyperopic. Nine of the females were myopic, thirty were hyperopic and one was emetropic.

"Cases of Monocular Amblyopia in Members of the Same Family." By Dr. Charles W. Kollock, Charleston.

Two sisters and two brothers of the same family were amblyopic in the left eyes.

CASE I.—Female, æt. 47. Vision in left eye, $\frac{15}{LXX}$; left eye, $\frac{4}{CC}$; with +1.50D. Right eye was $\frac{25}{XV}$; left eye not improved by any glass. Ophthalmoscopic examination showed hypermetropia between 3 and 4 D., but nothing else to account for the amblyopia.

CASE II.—Female, æt. 27. Vision was never good, but always better in the right eye. Right, $\frac{15}{LXX}$; left, large objects. Neither eye was improved by any glass. The ophthalmoscope showed disseminated choroiditis and there were other physical signs of inherited syphilis to be seen externally. She was said to have been borne with sores on her body and never been strong and healthy.

CASE III.—Male, æt. 30. He had been paralyzed by an attack of brain syphilis (acquired). Right eye, $\frac{15}{XX}$; left, large objects. No glass improved either eye. The ophthalmoscope showed the right disc slightly hazy, but no inflammation. In the left was a coloboma of the nerve measuring 12 D. in depth. There were no signs of inflammation.

CASE IV.—Male, æt. 50. Vision in right, $\frac{15}{CC}$; left, $\frac{6}{CC}$. Right, with +2.25 was $\frac{15}{XV}$; left, with +3.50 was $\frac{15}{XV}$. The ophthalmoscope showed nothing beyond the hyperopia. In only one of the four cases were there any signs of inherited syphilis. Two children of Case I were also examined and exhibited conditions in the left eye not present in the right. The

daughter, æt. 28, had slight dilatation of the left pupil for which no cause could be assigned and which still remains. Under homatropine both eyes showed hyperopia of 1 D., and vision, $\frac{15}{xv}$. The son, æt. 22, was examined under homatropine. Right, with +0.50 D. was $\frac{15}{xv}$; left, with +0.50 \bigcirc +0.50 cyl. 60° was $\frac{15}{xv}$.

"On the Frequency of Posterior Capsular Opacities at the Place of Attachment of the Hyaloid Artery." By Dr. W. F. Mittendorf, New York.

The paper calls attention to the frequency of small, round, lenticular opacities which the writer believes are the remains of the foetal hyaline artery, or mark the attachment of the artery to the posterior lens capsule. After observing two cases of remaining hyaline artery, the author studied every eye with a strong lens and the ophthalmoscope and found that in 1,884 persons these opacities were observed in 44 cases, which is a little more than 2% of all persons examined. They were observed more frequently in the right eye than in the left, and oftener in the male than in the female, not infrequently they are seen in both eyes of the same patient. They vary in size from a dot as small as the point of a pin to that of the size of a poppy seed, and frequently a magnifying power of a lens of 5 or 6 diopters is necessary to see them. The conclusions arrived at are as follows:

That these opacities indicate the point of attachment of the foetal hyaline artery to the posterior capsule of the lens and that probably the nutrition of the capsule is sufficiently interfered with at the time of the absorption of the artery to lead to the cloudiness at the point of attachment.

That the location of the spot on the capsule is almost invariably a little to the inner side of the posterior pole of the lens.

That the spots are usually well defined and only in one out of fifty cases several radiating lines probably corresponding to branches of the hyaline artery were visible.

That in no case was there any connection of the spots with

other opacities of the lens which were seen to exist at the same time.

That these spots are therefore non-progressive and do not lead to any impairment of vision, nor are they apt to lead to any refractive or other changes in the eyeball.

That it is only in very exceptional cases that they produce subjective symptoms, the patient usually not being aware of their existence.

That their occurrence is by no means rare as they have been found to be present in 2.3% of a large number of eyes, and as they are congenital they are found equally often in old and young people, and that they appeared to be oftener met with in the male than in the female which he considers accidental as the number of eyes seen is hardly large enough to establish this point. Their greater frequency in the right eye is probably likewise accidental for he was at a loss to explain why the right eye should be more frequently the seat of these opacities except that it is further from the heart, and nutrition perhaps a little more difficult and the process of absorption on this account slower and less complete.

Dr. Oren D. Pomeroy, New York, presented a paper on "Some Cataract Extractions With and Without Iridectomy," which was read by title.

"Preparations of the Nerves of the Cornea." By Dr. Carl Koller, New York.

Erhlich's method of staining the peripheral nerves by the injection of a saturated solution of methylene blue into the vessels of a recently killed animal was made use of. This colors the nerves of the cornea in a beautiful manner, but has the disadvantage of being only temporary and does not permit of the making of preparations. The speaker had for some time been experimenting with the object of making the staining permanent, and had to a certain extent succeeded. As the method was not yet perfect, it was not described, but a number of preparations showing the corneal nerves was exhibited.

"Scleral Puncture in Detachment of the Retina." By Dr. T. Y. Sutphen, Newark, N. J.

The author describes the results obtained in two cases, the first successful in restoring useful vision, the second resulting in a slight improvement.

CASE I.—H. M. æt. 50, came under observation July 30, 1891. In the right eye was a scar upon the cornea, a tear in the iris directly opposite, and the pupillary iris space was partly occupied by the shrunken lens, the traumatism dating back ten years, and resulting from an explosion of giant powder. With a convex lens of 9. D. his vision was $\frac{20}{60}$, but the use of this was very troublesome to him. In the left eye, upon the sclerotic was a small dark spot, evidently a powder stain, located about two lines to the temporal side of the margin. Directly beneath this was found a large detachment of the retina. The temporal edge of the lens was gray, the vitreous was quite clear. The man had first noticed trouble with this eye two weeks before as a dark cloud before his vision, his sight previous to that being good. The patient was put to bed and treated with pilocarpine injections, and later potassium iodide. The detachment gradually became total. Scleral puncture was resorted to December 1, 1891. There was no reaction, a slight œdema of the conjunctiva lasted three or four days. Material improvement was noticed from the second day. The patient was kept upon his back 3 weeks and left the hospital Jan. 15, 1892, with his retina *in situ* and vision $\frac{20}{40}$ without glasses, this being good, considering the fact that the opacity in the lens has increased during the time of detachment. The sight still remains good.

CASE II.—Mrs. S., æt. 48, a myope of moderate degree, sought treatment Dec. 17, 1891. Her trouble was a cloudiness before both eyes, which had existed for a long time, but which had increased greatly in the right eye during the previous week or two. Examination showed a cloudy vitreous in each eye, the right one containing large floating opacities. Vision, right eye, fingers at 18 feet; left eye $\frac{20}{10}$ with correcting

glasses. Under iodide of potassium the right improved considerably until Feb. 3, 1892, when she returned greatly alarmed about a dark cloud before her right eye. This proved to be a detachment of the retina on the nasal side. Treatment in bed and medication did not arrest the detachment, which soon became total. Scleral puncture was made May 18, 1892. At first there were patches of acute vision in the field, the patient being able to recognize objects across the room distinctly in certain directions. The retina had become reappplied in certain portions. This peculiarity soon gave place to a more general haziness of vision. The subsequent care of the patient was the same as in the other case. Upon examination of the eye a week ago, the retina was found in its normal position at its upper half, detached in the lower, vitreous cloudy, counts fingers at six feet in lower half of the field.

In both cases the operation was made under cocaine and with antiseptic care, using a solution of bichloride 1:12000. The puncture was made with a narrow Græfe knife, near the equator of the globe, between the insertion of the external and inferior recti muscles. With the globe well rotated upward and inward, the puncture was made directly through the conjunctiva, while the return of the globe to its normal position really converted the opening in the sclerotic into a sub-conjunctival one. Possibly had a large puncture been made in the second case, the result might have been better, but the conditions of the two cases were quite dissimilar.

"Orbital Cellulitis." By Dr. E. E. Holt, Portland, Me.

The inflammation spread to the temporal region, thence to the neck, interfering with deglutition, extending to the brain and producing death. A brief report of four similar cases was also given.

"Recurrent Bilateral Inflammation of the Capsule of Tenon, in Connection with Mercurial Poisoning." By Dr. Chas. J. Kipp, Newark.

The first attack resulted from an injury, but the attacks continued to recur. The patient was employed in an incandescent electric lamp manufactory and had become poisoned from the mercury used in his work. The recurrences continued until he gave up this work, but since leaving it (a year and a half) he has had no attack

"Pulsating Exophthalmus." By Dr. R. A. Reeve, Toronto, Canada.

The case was one in which the pulsating exophthalmus had followed trauma. It was thought that there was a lesion of the internal carotid allowing the blood to enter the cavernous sinus. Pressure to the carotid proved of no avail. A year ago the right common carotid was tied. Pulsation and bruit ceased for a few hours and then returned. Some months later finding that compression of the left common carotid stopped the pulsation and bruit, this vessel was tied, but the pulsation still persists. There is no pulsation in the right common carotid above the seat of ligation. Pressure upon the right external carotid stops the pulsation and the bruit absolutely.

"Sub-Conjunctival Application of Cocaine." By Dr. Carl Koller, New York.

The instillation of cocaine has only a superficial effect, but by beginning the instillation half an hour before operation, the deeper tissues are sometimes rendered anæsthetic, but not always. By the sub-conjunctival method, the deeper tissues are rendered anæsthetic. After making the conjunctiva anæsthetic by a 4% solution, a few drops of a 1% solution are injected beneath the conjunctiva. Tenotomy can then be done without the slightest pain. Cataract operations and iridectomies can be done without the slightest pain by rendering the conjunctiva anæsthetic and then injecting three or four drops of a sterilized 4% solution beneath the conjunctiva and waiting ten minutes.

Dr. Carl Koller, New York, read a paper on "The Form of (a) Images in Astigmatic Eyes."

Dr. Chas. J. Kipp, Newark, N. J., reported a case of Gumma of the Ciliary Body, and exhibited the specimen.

Dr. F. Buller, Montreal, Can., exhibited an improved Trial Frame.

Dr. J. A. Andrews, New York, showed an Apparatus for Washing out Cortical Matter. He also exhibited drawings of four cases of Gumma of the Iris.

Dr. Lucien Howe, Buffalo, demonstrated a Pocket Ophthalmoscope.

Dr. R. A. Reeve, Toronto, described a Modification of the Rotary Prism Test.

Dr. John Green, St. Louis, reported a case of Hyaline Bodies in the Nerve Head.

The following officers were elected:

*President—Dr. Hashet Derby, Boston.

Vice-President—Dr. George C. Harlan, Philadelphia.

Corresponding Secretary—Dr. J. S. Prout, Brooklyn.

Recording Secretary—Dr. Samuel B. St. John, Hartford.

Delegate to the Executive Committee, Congress of American Physicians and Surgeons—Dr. John Green, St. Louis.

Alternate—Dr. D. B. St. John, Roosa.

The following were elected to membership: Dr. J. A. White, Richmond, Va.; Dr. Walter B. Johnson, Patterson, N. J.; Dr. G. W. Hale, Nashville, Tenn., and Dr. R. F. Randolph, Baltimore, Md.

The next meeting will be held at New London, Conn., 3d Wednesday of July, 1893.

Adjourned.

SELECTIONS.

NOTES ON SPASM OF THE ACCOMMODATION.

BY W. H. BATES, M.D.

CASE I.—A business man, aged thirty-six, several years ago complained that his vision for distant objects had failed. He could not recognize his friends across the street. Large signs could not be read until he was very near. He felt that he had become near-sighted. The cause of his poor vision he ascribed to continued writing by a poor light. After stopping the work which strained his eyes, he recovered without other treatment. Now his vision is perfect without glasses.

CASE II.—A lady, aged thirty-three, has had poor vision for a number of years. To obtain normal vision she requires — 1 D. S. After treatment of the eyelids for one week vision improved from $^{20}/_{XL}$ to almost normal, $^{20}/_{XX}$ —, without glasses.

CASE III.—An oculist, aged thirty, reports that ten years ago he was wearing — 1.5 D. S. to obtain good vision. Under atropine at this time he was still myopic. Several years ago, after an attack of measles, vision normal, $^{20}/_{XX}$, without glasses. With the return of his general health the spasm came back and he was compelled to use — 1.5 D. S. to obtain vision of $^{20}/_{XX}$. Atropine was used for several weeks until constitutional symptoms of atropine poisoning were produced. Vision under atropine $^{20}/_{LXX}$ with — 1.5 D. S. vision normal, $^{20}/_{XX}$.

Later, without the use of atropine, he finds that there are times when his vision is normal, $^{20}/_{XX}$, without glasses.

It is a curious fact that the spasm relaxed during ill health. The impression is prevalent among many authorities that ill health at least aggravates if it does not act as a factor in the cause of myopia. The following case also shows that the spasm relaxed during ill health:

CASE IV.—A medical student, aged twenty-one has been wearing for four years a minus fourteen-inch glass with no discomfort, most of the time at a German gymnasium. The glasses were prescribed by a prominent oculist who used atropine for one week and made several tests. Lately, he being run down his eyes have not been entirely comfortable. An examination without atropine showed a myopia of one half the degree of the glass he is wearing. Under atropine two days, patient is not myopic. I am indebted to Dr. H. Seabrook for the notes of this case.

CASE V.—An artist, aged eighteen, gave the history of myopia after an attack of measles when seven years old. Under atropine five days, vision $^{20}/_C$, w. — 1.5 D. S. = $^{20}/_{XX}$. These glasses were prescribed for constant use. Several months later vision the same with and without the glasses as when under atropine. After remaining five minutes in a dark room with the eyes closed, rubbing the skin of the forehead a few times with the hand, and then testing the vision, it was found that the patient had temporary vision of $^{20}/_{XV}$ without glasses. The cause of the spasm in this case seemed to be due to the effect of light.

In the following case also there seemed to be spasm from the effect of light:

CASE VI.—A physician, aged thirty-five, has a vision of $^{20}/_{CC}$ in the right eye; the left eye has normal vision. After remaining in a dark room for a few moments, the vision of the right eye is normal, $^{20}/_{XX}$, for a short time only. Under atropine one week, vision of the right eye $^{20}/_{CC}$, with a minus twenty inches glass, vision normal, $^{20}/_{XX}$. After remaining in a dark room for a few moments and then testing the vision of the right eye in the light, vision is normal, $^{20}/_{XX}$, for a short time only.

When treatment can relieve this sensitiveness of the eyes to the light, the spasm is sometimes relieved also, as in the following case:

CASE VII.—Mrs. H., aged twenty-three, is wearing $-1/LX$. She has chronic conjunctivitis slight, with considerable pain in the eyes from the effect of light, especially gas-light. Treatment of the lids relieved the intolerance of light, and the vision became normal at the same time without glasses.

CASE VIII.—A stenographer, aged thirty, wore glasses to see at a distance.

April 29, 1888.—Vision of the right eye $^{20}/LXX$, with $-1/XX$ vision normal. Vision of the left eye $^{20}/LXX +$, and requires some glass to obtain normal vision. Cocaine applied to the mucous membrane of the left nostril improved the vision of the left eye. Cocaine in the right nostril did not improve the vision of the right eye to an appreciable degree. A number of operations were performed for the removal of nasal hypertrophies, etc.

May 15, 1888.—Vision of the right eye not improved. Vision of the left eye normal, $^{20}/XX$, without glasses.

June 1, 1891.—Three years later the left eye was still normal, the right eye still myopic.

CASE IX.—Mr. M., aged twenty, complains of being nearsighted. He has been tested three times under atropine.

April 5, 1888.—After using atropine for a week, pupils widely dilated, throat dry, cheeks flushed. Vision of both eyes $^{20}/LXX$, with -2 D. S. vision normal. Ophthalmoscopic examination showed myopia. Cocaine was applied to the right inferior turbinated and septum of the nose, when the vision at once became nearly normal. At the end of fifteen minutes the vision returned to $^{20}/LXX$, what it was before the application of the cocaine in the right nostril. The vision of the left eye was not materially changed by the application of the cocaine in the right nostril. A sharp projecting point on the right septum was removed with the saw after cocaine was applied. Vision of the right eye became normal, $^{20}/XX$, and remained normal.

July 15, 1888.—Three months later the vision of the right

eye is still normal, $^{20}/_{XX}$. The vision of the left eye is unchanged, $^{20}/_{LXX}$. Cocaine in the left nostril improves the vision of the left eye to the normal for a few minutes only.

CASE X.—A sailor, aged thirty-five, complained of recent failure of the vision. He required a minus twenty-inch glass to give him normal sight. Treatment for several weeks of the eyelids and nose with nitrate of silver and yellow oxide-of-mercury ointment improved the vision from $^{20}/_C$ to the normal, $^{20}/_{XX}$, without glasses.

CASE XI.—A colored girl, aged twelve, an epileptic, had always been near-sighted(?). Atropine was used in both eyes for a week. At this time, vision of both eyes $^{20}/_{CC}$ — ; with a minus ten-inch glass the vision was normal. With the ophthalmoscope the fundus could be seen best with this glass, but there were moments when the light streak on the vessels could be seen with a far-sighted glass, convex twenty inches, but seen only dimly. The atropine was continued and the patient seen twice a week for five months, when the vision and refraction were found to be still unchanged. At the end of another month, altogether making six month's use of the atropine, patient had normal sight with a convex twenty-inch glass.

CASE XII.—A boy aged ten year applied for treatment.

July 12, 1888.—Until two years ago vision all right. He attends school in the winter months. Does not study at home. Under atropine two days, with the general symptoms of atropine poisoning, fever, dry throat, etc., vision in both eyes $^{20}/_{CC}$ +; with minus sixteen-inch glass, vision normal. He was kept under atropine ten weeks, with the result that the vision in both eyes became slowly normal without glasses. Atropine stopped. One month later vision still normal without glasses. Patient went back to school and resumed his studies. After a time the spasm returned; the use of atropine was followed by relief, only to have another relapse soon after returning to school. Patient was lost sight of for several years.

March 19, 1891.—Under atropine has a myopia of 3.5 D. S. Accommodation paralyzed completely by atropine. The atro-

pine was stopped and a mild trachoma treated. The vision improved to $\frac{20}{LXX}$ without glasses after a month's treatment of the lids, when the patient again disappeared.

It seems reasonable to infer that this patient might have been permanently benefited after receiving temporary relief if he could have been kept under observation and received proper care.

Conclusions.—1. Spasm of the accommodation can not always be relieved by atropine.

2. The vision of symptomatic myopia can often be improved so that glasses are unnecessary.—*N. Y. Med. Jour.*

OBITUARY.

THE LATE DR. C. J. LUNDY.

The profession will learn with sorrow, of the death of Dr. C. J. Lundy, which occurred at his residence in Detroit, Tuesday, May 24. The deceased had been suffering for some time, and only recently had returned from the South, where he had been sojourning for his health. The cause of death was appendicitis. An operation was undertaken for the relief of the trouble, but the patient's strength, already broken by his long sickness, failed him. Dr. Lundy saw many of his friends for the last time, when at a recent meeting of the State Medical Society, he was proudly and unanimously elected its President. The profession, in his death, loses an able and accomplished member. Charles J. Lundy was, at the time of his death, forty-six years of age. He received his degree from the University of Michigan in 1872. He went to Bellevue Medical College in 1873 and graduated from that institution in 1875. He then devoted special study to ophthalmology and returned to Detroit in 1878, where he has since enjoyed a large and lucrative practice. He was Professor of Ophthalmology in the Detroit College of Medicine. He has filled many important medical positions, having been President of the Detroit Medical and Library Association, and, at the same time of his death, President of the State Medical Societies, and one of the collaborators of this journal.